Pacific Creosoting Plant
(Wyckoff Facility)
5350 Creosote Place NE
Bainbridge Island
Kitsap County
Washington

HAER No. WA-131

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Western Region
Department of the Interior
San Francisco, California 94107

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HISTORIC AMERICAN ENGINEERING RECORD
Pacific Creosoting Plant (Wyckoff Facility), HAER No. WA-131

Location: 5350 Creosote Place NE
Bainbridge Island
Kitsap County, Washington 98110

UTM Coordinates: USGS Quad - Duwamish Head
10 537080 5273830
10 537860 5273830
10 537080 5273460
10 537860 5273460

Legal Dcscription: Township 25; Range 2E; Section 35; Government Lots 3 and 4

Present Owner: Pacific Sound Resources
5350 Creosote Place NW
Bainbridge Island, WA 98110

Historic Use: Creosote Plant

Present Use: Superfund Site

Construction Date: Circa 1905; Altered During Early Twentieth Century

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Report Date: December 23, 1996

Significance: The Pacific Creosoting Plant/Wyckoff Facility was a creosote plant constructed circa 1905. During the early twentieth century, as many as 100 men worked at the plant, and most of them lived at the site. By the mid-1930s, it had become one of the largest creosote plants in the world. This facility featured eight to nine large retorts which were used in seasoning green wood, and in the injection of treating solution. In addition to the workers' houses and a general store, major buildings included a machine shop and boiler and engine rooms. Until it closed in the 1980s, the Wyckoff Facility remained a primary force in the economy of Bainbridge Island, providing ties, poles, pilings, and lumber to markets throughout the world. Its products were used in major construction projects in Los Angeles, San Francisco, Seattle, Alaska, Saudi Arabia, and other locations.

I. PROJECT DESCRIPTION

The Pacific Creosoting Plant (Wyckoff Facility) is located on the southeast side of Eagle Harbor on Bainbridge Island, Kitsap County, Washington (see Figure 1). Currently, the creosote plant consists of approximately nine historical buildings and structures situated on 16 acres along a shoreline that has been extended and filled at least twice.

Most of the site's remaining buildings and structures are situated on a relatively flat shelf that resembles a fish hook. The shank of the fish hook extends east and west. The log peeler and the skid ramp are at the extreme western limit of the site. The eastern section contains bulkheads that define the shoreline and separate the boom area (in the water) from the air-drying yard directly inland from the boom area. The bulkheads also control erosion. The boom lunch room is located east of the log peeler at the water's edge. The row of worker's houses was upslope from the air-drying yard. Northeast of the air-drying yard is the main complex of the plant. The engine room (retort) building and the West Dock define the main axis of the complex: northwest to southeast. The largest creosote storage tank is located directly southeast of the engine room building, and the office is behind the storage tank near the water's edge. The boiler building is located northeast of the engine room. The machine shop is northeast of the boiler building and parallel to the bulkhead at the eastern limit of the site.

Historically, the treatment process was carried out in a concentrated area containing the retorts, the engine room, boiler room, machine shop, and storage tanks that held the creosote and other preservatives. Adjacent to this central concentration were the transfer pit, the cranes employed to move the pilings and poles around the site, and the docks used to receive raw materials and to ship out the preserved poles and pilings. Upslope and south of the main treatment area were the general store, including the post office, and the company houses and bunkhouses used to shelter the married and single workers. More than two-thirds of the approximately 30 original buildings and structures have been removed from the site.

This former wood preserving facility is currently listed on the Environmental Protection Agency's (EPA) National Priority List. During the 1980s, environmental investigations at the Wyckoff facility revealed that its wood preserving operations resulted in the release of creosote, pentachlorophenol, and fuel oil into the area's soil and groundwater. Remediation efforts introduced many modern structures at the site during the 1980s and 1990s. To treat contaminated ground water, for example, a groundwater treatment system was installed on the west side of the office, along with an extraction system throughout the plant, including seven groundwater extraction wells and piping. In addition, a sheet pile wall has been installed in the transfer pit.

The EPA's plans call for removal of eight of the remaining buildings and structures at the site, as part of the environmental cleanup activities. Although the EPA determined that these resources are not eligible for listing in the National Register of Historic Places, the agency undertook this HAER documentation to address concerns of the local community and the Washington State Historic Preservation Office regarding the historical significance of the site. The eight buildings and structures, in addition to three houses, are described below.

II. ARCHITECTURAL DESCRIPTIONS

Engine Room Building (see Photographs WA-131-A-1 through A-10)

Present Condition

The engine room building is a single-story, rectangular, gabled, frame building with two small shed-roofed wings on the northeast and southeast ends of the building. The foundation is stone. The long axis of the building is northeast to southwest. The walls and the roof are clad in corrugated metal sheets.

The southeast facade has an entry off-set, left of center. The door opening is flat with plain trim. The door is flush with diagonal boards. Ten, six over six, double-hung windows are evenly spaced across the facade and positioned in the lower half of the wall. The window openings are flat with plain, narrow trim surrounds and a slipsill. Paired rafter ends and roof sheathing form a shallow open cornice.

The southwest facade is a gable end. A small shed-roofed wing extends out from the main building. The shed is clad in corrugated metal sheets.

The northwest facade is similar to the southeast facade, except that the window openings are in the upper half of the wall, closer to the roof-wall junction. The window openings and windows are narrower than those on the other facade. There are no sashes or glazing visible in the openings.

The interior of the engine room currently contains a compressor, oil pumps, and valves. The retorts have been removed.

History

The Engine Room, which served as the control room for the preservation process carried out in the retorts, was constructed in its current location circa 1922. The building, covering the rear of the retorts, is approximately 100 feet by 180 feet. The number of retorts in the building changed over time, fluctuating between six and nine.[1] In later years, the usual number of operating retorts was six; additional small retorts that appear in some photographs acted as compressed air reservoirs for pneumatic tools.[2]

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[1]Sanborn Company, Fire Insurance Maps, Bainbridge Island, 1917 and 1929.

[2]Darrel Palmer, Edgar Frease, and Barry Staymates, Taped Interview with Gerald Elfendahl, August 29, 1995, Bainbridge Island Historical Society. Hereafter cited as Palmer, et al. Interview.

Boiler Building (see Photographs WA-131-B-1 through B-4)

Present Condition

The boiler building is a tall, two-story, gabled, and frame structure. The exterior walls and roof are clad in corrugated metal sheets. The foundation is not visible. The long axis of the building is northwest to southeast.

The southwest facade has an entry left of center. The door opening is flat with no trim. There are four evenly-spaced, metal sash industrial-type, single-glazed windows in the ground floor and two metal sash, industrial-type, single-glazed windows, left of center, in the second floor. The flat window openings are rectangular with the long axis in a horizontal plane. There is no surround on the openings. There is no cornice at the roof-wall junction. There is a louvered ventilator structure on the ridge line of the building.

The northwest facade is a gable end. Centered in the gable at ground level is a large, flat door opening. There is no door. The opening is flush with the exterior wall and is untrimmed. A horizontal exhaust pipe extends through the exterior wall near the upper right corner of the door opening and is attached to a vertical exhaust stack. The boilers have been removed.

The northeast facade is similar to the southwest facade, except that a large, brick smoke stack obscures a portion of the wall.

History

The Boiler Building, located northeast of the retorts, is approximately 50 feet by 40 feet. A review of historical maps (see Figures 8 and 9) shows the same position of the Boiler Building, relative to the retorts, during the life of the site. The Boiler Building furnished the steam to heat the preservative in the retorts. According to a former employee, steam also provided a back-up system that could be used to generate electricity for the plant. As long as it was available, sawdust from saw mills in the region was used to fire the boilers. While internal component changes no doubt occurred, historical records do not indicate major renovations to the building.[3]

Machine Shop (see Photographs WA-131-C-1 through C-6)

Present Condition

Although its exact date of construction is unknown, the machine shop is one of the oldest

[3]Sanborn Company, Fire Insurance Maps, Bainbridge Island, 1917 and 1929.

historic buildings at the site.[4] It is a single-story, L-shaped, gabled, and frame structure. The foundation is not visible. The long axis of the building is northwest to southeast and the L portion extends to the southwest. The exterior walls and roof are clad in corrugated metal sheets.

The southwest facade has four entries; two single-door entries right of center and two double-leaf entries, one centered and one left of center. Both double-leaf entries have plain, untrimmed surrounds. The double-leaf, diagonal board doors are slightly recessed, set in plain rails and stiles. Seven six over six, double-hung windows are clustered five left of center and two clustered right of center between the two single doors. The openings are flat with plain trim surrounds and a slipsill. The eighth three over three, fixed-sash window is right of center and is smaller than the others, but has the same surround. The rafter ends and roofing material form a moderate, open cornice. The gable end of the wing that appears as a part of this facade has a large equipment door, not one of the entries in the facade, centered in the gable. The door is double-leaf and the components appear to be plywood.

The northwest facade has two entries; one single door centered in the gable and one double-leaf door right of center, near the wing extending to the right. One six over six, double-hung window is at the extreme left of the wall. Two six over six windows are right of center and evenly-spaced in the wing wall. The window openings and surrounds are identical to those described for the southwest facade.

Significant features in the interior include the wood-block floor, skylight, cabinets, and work tables, which contain a variety of tools. The shop building was used for repair and fabrication of equipment.

History

As noted above, the Machine Shop is probably the oldest historic building on the site. Its location has not changed from 1910 to the present. The Machine Shop is approximately 30 feet wide by 115 feet long, including the L-shaped portion. Historical records do not reveal major physical modifications to the building.[5]

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[4]Edgar Frease, *Notes on Creosote History*, Summer 1995, Bainbridge Island Historical Society, p. 1.

[5]Sanborn Company, Fire Insurance Maps, Bainbridge Island, 1917 and 1929; CH2M Hill Map, *Wyckoff Operable Unit*, March, 1993.

Log Peeling Operation (see Photographs WA-131-D-1 through D-5)

Present Condition

The log peeling operation includes four modern buildings and a skid ramp. The buildings are the peeler shed, the chipper building, the tally shack, and the utility shed. All of the buildings are shed-roofed.

The peeler shed is a rectangular, single-story, frame building. One side and one end are open. The other end has vertical board siding. The flat shed roof is sheathed in corrugated metal sheets. A large hopper-like device on the southeast end of the roof was part of the bark removal system.

A structure associated with the peeler operation is the inspection deck, also known as the "live" deck, which is located parallel to the peeler shed. It is a series of wood platforms, framed with metal rails, and kept in motion by a series of chain-driven sprockets (see Photograph WA-131-D-2).

The chipper building is two-story, square, and the exterior walls and roof are clad in corrugated metal sheets (see Photograph WA-131-D-1). A metal conveyor chute enters the upper story of the southeast facade. Pipes exit the northwest facade at ground level and lead to a hopper, which was used to load trucks with the debris from the peeling process. The second pipe conveyed the remaining debris to a dump site.

The utility shed, located between the chipper building and the tally shack, is a small building with its exterior walls and shed roof clad in corrugated metal sheets.

The tally shack is a small, single-story building with a shed roof. The exterior walls are plywood. The shack has two window openings and one door opening. The window openings are in the southeast corner of the shack. There is no window surround; the windows are single-glazed and fixed. The door opening is in the northeast facade. There is no door surround; the door is flush with no glazing.

History

Log peeling operations date back to the earliest days of the site. Prior to the early 1950s, this activity was accomplished manually with large flat or curved chisel-like tools called "spuds." A spud was attached to a pole similar to a peavey, and used to strip the bark from green timber before it moved on to be sized and classified. A former employee recollected that "peeling in the spring was easy because the sap was fresh," and "later in the year peeling got a lot tougher."[6]

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[6]Darrel Palmer and Edgar Frease, Taped Interview with John Warner, HRA, Inc., February 6, 1996, Bainbridge Island Historical Society. Hereafter cited as D. Palmer Interview.

Sometime during the early 1950s, the log peeling operation became mechanized. The first mechanical peeler was a Nelson Pole Peeler, a gear-driven device that was slow, but less arduous than peeling by hand. A few years later, an Eford "Hurricane Shaver" replaced the older Nelson. This machine was hydraulically operated, much faster, and much more efficient. The bark residue from this operation was pulverized in the chipper building, and conveyed (blown with air pressure) through a series of pipes to the old clay mine location, near the southwest corner of the site (see Photograph WA-131-D-4). The "live" deck was used by workmen to sort and classify timbers as they exited the peeler. After inspection and classification, the chain-driven deck deposited timbers away from the peeler, where they awaited movement to the air-drying yard.[7]

Boom Lunch House (see Photographs WA-131-E-1 and E-2)

Present Condition

The boom lunch house is a two-story, rectangular, frame building with a shed roof and exterior walls clad with corrugated metal sheets. The foundation is not visible. The long axis of the building is northeast to southwest.

The southwest facade has a wood staircase that rises at approximately a 45 degree angle parallel to the building wall. A plain balustrade acts as a safety railing. The entry is on the second floor, right of center. The door surround is plain and trimmed with dimension lumber. One hinged, three sash, single-glazed, metal frame window is in the extreme left corner of the second floor wall. The window surround is plain, untrimmed with a lug sill.

The northwest facade has one entry centered in the wall at ground level. Two small single-glazed, double-hung windows are right and left of the entry, in the upper half of the ground floor wall. Two hinged, three sash, single-glazed, metal frame windows are left and right of center in each corner of the second floor wall. The surrounds are identical to those in the southwest facade.

The northeast facade has one window right of center in the right corner of the second floor. The window surround and the window are identical to that described for the southwest facade.

History

The Boom Lunch Room was a temporary building fabricated circa 1950, but it became permanent to the site through continued use. The upper floor of the building served as the office for the log boom supervisor. The wide windows allowed full view of the work conducted in the log boom area immediately to the front. The lower floor contained a lunch room for the log boom

[7]D. Palmer Interview.

workers, a drying room for their equipment, and a restroom.[8]

Office (see Photographs WA-131-F-1 through F-4)

Present Condition

The office, which was most likely constructed after 1929, is one of the oldest buildings at the site.[9] It is a single-story, gabled, rectangular, frame building with its main axis east and west. The exterior walls are of horizontal ship-lap wood siding with dimension lumber corner boards. The foundation is point and pier.

The south facade has two entries; one slightly left of center and one right of center near the corner. Both doors have plain trim surrounds with embrasures. The left door is flush with no decorative detailing. The right door features five panels; the rails and stiles are plain. Four pairs of single-glazed, double hung windows are positioned one pair left of center, one pair centered, one pair right of center, and one smaller pair at the extreme right corner. The window openings are flat with plain trim surrounds and a slipsill. A narrow, closed cornice boxes the rafter ends. The roof is sheathed in composition shingle.

The east facade has one entry centered in the gable at ground level. Two pairs of single-glazed, double-hung windows are right and left of center. The left pair is smaller. The surrounds are plain with slipsills. The portion of the gable above the cornice is clad with irregular wood shingles. Unlike the other buildings and structures listed here, the office is currently in use.

History

The Office probably dates from after the period of the site expansion program in the 1920s. It is approximately 20 feet by 50 feet. There is no indication in historical photographs or maps that the building underwent modifications.[10]

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[8]D. Palmer Interview.

[9]Delbert McDonald, Transcribed Interview with Gerald Elfendahl, Bainbridge Island, June 11, 1995, Bainbridge Island Historical Society. Hereafter cited as McDonald Interview. See also Edgar Frease, *Notes on Creosote History*, p. 1.

[10]Sanborn Company, Fire Insurance Maps, Bainbridge Island, 1917 and 1929.

West Dock (see Photographs WA-131-G-1 through G-12)

Present Condition

The West Dock is a 625-feet long structure with variable widths. It ranges from 91 feet at the harbor end, to 180 feet at the bays on the west side, to 366 feet at the bulkhead end. The dock is situated near the northeast boundary of the site at the approximate location of the original Bill Point, as it appears in turn-of-the-century maps. The long axis of the dock is generally NW (harbor end) to SE (bulkhead end) with two bays along the west side and one inset on the east side.

The horizontal surface of the dock is supported by a series of pile bents driven into the tidal flats that surround two sides of the site. The timber caps that tie the individual piles together to form each bent are spliced at their butt joints with wooden fish-plates secured with large nails or spikes. Individual piles are positioned around the outer perimeter of the dock at each bent. These piles appear to serve two purposes: they provide lateral support to the ribbands and the outer-most stringers around the perimeter of the dock, and they protect the bents from rafted logs that were once secured to the dock.

The stringers, similar to floor joists in house framing, are positioned perpendicular to the bents and connect the bents to form the structural support for the plank decking. Plank decking covers the entire horizontal surface of the dock. A low ribband or guardrail constructed of timbers establishes the perimeter of the horizontal surface of the dock. In some places, the original timber ribband has been replaced by treated logs.

Pairs of railroad track extend the full length of the dock parallel to its long axis. Historically, there may have been as many as seven pairs of tracks running on the dock. Some sets extended the length of the dock, while others extended half-way out the dock. The shorter sets of track accommodated the movement of loaded trams in and out of the retorts before and after treatment. The lateral sets of track facilitated the movement of the mobile cranes that loaded and unloaded trams, and shifted logs and timbers around the dock. Historical photographs and maps covering an 80-year period of time indicate that the number of tracks varied.

Some of the pile bents that support the deck of the dock are in poor condition. In some positions along the underside of the dock, batter piles appear to have been added to correct or stabilize lateral shift of other piles in a bent.

History

The West Dock, at least parts of it, is one of the oldest structures on the site. However, modifications to the size and shape of the dock and requirements for repairs over the years since 1905, make pinpointing original components difficult. The first and smaller version of the present dock was likely built in 1905, after the Perfection Pile Preserving Company moved its operation to

Bill Point in Eagle Harbor. The dock built in 1905 was approximately 300 feet long and 75-80 feet wide. The sides were straight and did not have the various bays or insets that appeared later.[11]

In the early 1920s, a number of changes occurred to the dock. In conjunction with a project to expand the overall size of the working area of the site, the structure was lengthened and the portion which contained the paving-block mill was widened by driving more piles on the east side of the dock and adding decking. Changes continued throughout the next two decades, and by 1944, the dock had increased in length to 625 feet and a width at the bulkhead of approximately 185 feet.[12]

A review of historical photographs and maps reveals striking changes. The two bays that extend out from the west side of the present dock were not in evidence in 1944, but in the early 1960s, they appear in photographs and drawings. By 1988, the length of the dock had remained at 625 feet, but the width of the dock at the bulkhead had increased to over 350 feet.[13]

The West Dock was the site of a number of operations or activities that were fundamental to the mission of the company. The first activity associated with the West Dock was directly related to the treatment process. Workers loaded framed timbers and other wooden items onto trams on the West Dock and placed them in the retorts for treatment. After treatment, the trams were pulled out of the retorts and allowed to cool on the West Dock.[14] While still on the trams, the charges (treated items) were tested to ensure the depth of preservative penetration was correct in accordance with industry standards. Charges not adequately penetrated with preservative were returned to the retorts for additional treatment.[15]

The second operation of importance conducted on the West Dock was the paving-block mill that occupied the southeast corner of the structure for almost five decades.[16]

The mill produced treated, wooden paving blocks that were used to surface city streets in the late nineteenth and early twentieth century. After the mid-1930s, treated paving blocks were used primarily for the floors in factories, particularly those having heavy, vibration-producing machinery.

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[11]U.S. Army Corps of Engineers, *Harbor Line Chart of Eagle Harbor, Washington*, Seattle District Office, August 31, 1905.

[12]*Map of the Pacific Creosoting Company Plant of West Coast Wood Preserving Company*, no publication data, March 1944; Sanborn Company, Fire Insurance Maps, Bainbridge Island, 1917 and 1929.

[13]C.L. Stoddard, *Site Map, Eagle Harbor Plant, Bainbridge Island*, Seattle, Washington, September 19, 1988.

[14]Palmer et al. Interview

[15]Palmer et al. Interview.

[16]Edgar L. Frease, Telephone Interview with John Warner, Bainbridge Island and Seattle, July 15, 1996. Hereafter cited as Frease Interview.

In this last application, the vibration-dampening properties of the wooden blocks decreased the noise and vibration levels in the factories.[17]

Square paving blocks were cut to customer specifications but the average size was four inches wide by eight inches long. The first 6,000 paving blocks produced by the Pacific Creosoting Company were cut by hand but later a gang-saw (a machine with multiple saw blades) was used to make a series of longitudinal and cross cuts. The gang-saw was housed in the paving-block mill building. The gang-saw could produce many blocks in a few passes through a log. The untreated blocks were placed in metal basket-like containers. The containers were placed on trams, inserted into the retorts, and the treatment of the paving blocks took place.[18]

Paving-block production was important to the Pacific Creosoting Company in the early decades of the twentieth century. In fact, H.E. Horrocks, the general manager of the Pacific Creosoting Company in 1919, was given credit for drawing up the treatment specifications for Douglas fir paving blocks. In an announcement of Horrocks' contribution before a session of the American Wood Preservers' Association (AWPA), the Pacific Creosoting Company was acknowledged as having "treated most of the paving blocks used on the Pacific coast."[19]

As the technology for building streets improved and pneumatic tires on automobiles became standard equipment, and as the costs of wood and labor to build streets became prohibitive for this labor-intensive construction method, the demand for treated, wooden paving blocks decreased. These factors, combined with the general cessation of many construction projects during the Depression of the 1930s, nearly destroyed the treated paving-block segment of the wood preservation business.

During World War II, however, there was a resurgence of paving-block use, which was probably due to increased construction of heavy-industry facilities to support the military effort. After 1945, paving-block production was employed exclusively for indoor floor application.[20]

As the demand for paving blocks diminished, the paving-block mill became less important to plant operations. Although the exact date of the mill's removal from West Dock could not be

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[17]Frease Interview; American Wood Preserver's Association. *Proceedings of the Tenth Annual Meeting* (Baltimore, MD.: The Peters Publishing Company, 1914), pp. 227-230; Frease Interview.

[18]American Wood Preservers' Association. *Proceedings of the Eleventh Annual Meeting* (Baltimore, MD.: The Peters Publishing and Printing Company), pp. 320-321; Frease Interview; Elsie Franklin Marriott, *Bainbridge Through Bifocals*, (Seattle: Gateway Printing Company, 1941), p. 85.

[19]American Wood Preservers' Association. *Proceedings of the Fifteenth Annual Meeting*, no publisher, 1919, p. 296.

[20]American Wood Preservers' Association. *Proceedings of the Forty-Second Annual Meeting*, no publisher, 1946, pp. 46-47.

determined, one long-time employee believes it occurred in the early 1970s.[21]

The third major operation on the West Dock required the broad expanse of work space available there for framing and pre-treatment test assembly of structural components of bridges, trestles, and wharves. Framing included all boring and cutting associated with ties, poles, and timbers. Cutting and boring were accomplished prior to preservation treatment so that all surfaces, including those in the interior, were fully protected by the preservative. Test assembly of the structural components was accomplished prior to treatment to ensure the framing had been completed correctly. If additional framing was required on the job site, customers were reminded to treat new, untreated surfaces before final assembly.[22]

The Pacific Creosoting Company offered complete framing service and treatment of timbers in accordance with the customer's specifications, or treatment alone for components already framed by the customer and shipped to the plant in bundles. Each treated timber of a bridge or other structure was marked prominently, by plant personnel, with a sequential number to facilitate final assembly in the field. The West Dock had fixed, and portable machines available to bore holes and to make the cuts for half-lap joints common in cross-bracing horizontal structural members of wooden bridges and trestles. For many years, a Tieckner framing saw was permanently installed on the West Dock. During the most active years of the plant, framing carpenters used pneumatic boring and cutting machines, a distinct improvement over hand tools used in the first decades of the twentieth century.[23]

Oil/Creosote Unloading Dock (see Photographs WA-131-H-1 through H-8)

Present Condition

The Oil/Creosote Unloading Dock is a 400-feet long wooden structure that extends out into the harbor between the log peeling area and the West Dock. The long axis of the dock is north (harbor end) and south (bulkhead end). The dock, modified structurally a number of times over the years, has been in its current location from the earliest days of the Pacific Creosoting Company's occupation of the site.

The dock is constructed of dimension lumber, timbers, and treated pilings. The treated pilings, capped with timbers, form a series of 17 bents. Stringers and angled, longitudinal struts combine to form the horizontal surface of the dock, supporting a walkway along the eastern side

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[21]Frease Interview.

[22]West Coast Wood Preserving Company. *Preservation of Douglas Fir Timber*, no date, p. 11; Sanborn Company, Fire Insurance Map, Bainbridge Island, 1929.

[23]West Coast Wood Preserving Company. *Preservation of Douglas Fir Timber*; Palmer et al. Interview.

(right side facing the harbor) of the dock. The planked walkway covers only 1/4 of the horizontal surface of the dock; the rest of the surface is open and a series of wooden saddles attached to cross-members once supported the two pipelines from the harbor end to the bulkhead end.

There are three trestle-framed sections spaced along the length of the dock. These sections are constructed of shaped timbers, cut to form upper and lower horizontal members, and angled timber braces that connect the upper and lower horizontal members. The lower horizontal structural member is formed by two timbers butt-joined together and secured by wooden fish-plates on both sides of the joint. Metal bolts secure the fish-plates to and through the lower horizontal member at the splice. Three metal rods, threaded at one end to accept a nut and backed with a steel plate, provide stability between the upper and lower horizontal members of each side of the trestle section. Angled braces made from dimension lumber and affixed outboard of each side of the sections provide vertical stability to each side of the section. A simple metal pipe and cable safety railing extends between the three trestle-framed sections and around the platform at dock end.

Overall, the dock is in poor condition. Some bents have additional piles that are connected to and support damaged or rotted piles. The two pipelines that carried oil and creosote from tanker ships to the onshore storage tanks have been removed, and many of the wooden saddle supports for the pipelines are missing.

History

The dock appears in many early photographs and on Sanborn maps of the site. The dock has changed considerably during the twentieth century. However, most of the changes have been predicated on maintenance requirements rather than on operational needs.[24]

Ships arrived at the dock loaded with bunker oil and creosote from other ports in the United States and from other countries. The structure supported two separate pipelines, one for oil and one for creosote. From 1927 to 1971, the creosote pipeline was eight inches in diameter and made of carbon steel. In 1971, a portion of the pipeline developed a leak that was repaired with six-inch diameter pipe. Similarly, the oil pipeline was an eight-inch diameter pipe made of carbon steel. After 1981, oil and creosote were delivered by tanker truck overland by road.[25]

Petroleum oil delivered to the site served one of two purposes, either as fuel that was stored for emergencies if electrical power failed; or as a carrier oil for preservatives. The main buildings on the site had redundant power systems; electrical power was primary but oil-fired boilers could produce steam to turn a generator to produce electricity for the site in case of power interruption

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[24]H.C. Henry. Photograph Albums, Accession No. 1420. Special Collections, Allen Library, University of Washington, Seattle; Sanborn Company, Fire Insurance Maps, Bainbridge Island, 1917.

[25]EPA, *RI-FS Plan for the Wyckoff/Eagle Harbor Superfund Site, Bainbridge Island*, Washington, January 7, 1994, pp. 2-2, 2-3.

from the main supply.[26]

Expanded use of petroleum oil as a carrier for preservatives increased the use of the dock. Over time, the price of creosote increased to a level that creosote-only preservation became relatively expensive. During the mid-1920s, a less expensive combination of petroleum and creosote oils became an industry standard and was used in the retorts for certain treatment applications. In the 1950s, pentachlorophenol (PCP), a dry chemical preservative, was typically dissolved in fuel oil; this combination preservative was used often in lieu of creosote and petroleum oil combinations.[27]

Worker's Residences

Present Condition

Residence No. 1

This house is a single-story, square plan, frame building with a medium-hipped roof. A square, red-brick chimney penetrates the roof surface at the peak. Constructed on sloping ground with the south facade at ground level, the horizontal foundation and the sloping ground form a large open area, similar to a basement, under the building. The basement is protected from the environment by vertical board exterior covering that extends from ground level to the rim joist of the building on three sides. The roof is sheathed in composition shingle. The exterior walls are shiplap board siding.

The north facade contains a veranda-style, frame porch extending across the facade; the roof of the porch is a shed-extension from the hip roof line. Exposed rafter ends form a moderate eaves. Centered on the porch is a set of plain board steps. The original frame porch has been altered by the addition of a series of casement windows which create a sunroom-type enclosure across the front of the house. The metal-framed windows are glazed with two panes wide by four panes long in a vertical rectangular sash. Centerline in the facade is one entry way; four windows are evenly distributed left and right of the entry opening. The window openings are flat, rectangular shape with plain trim surrounds and slipsills. The windows have double-hung sashes, and two-pane, side by side glazing in each sash. The entry way is flat with a plain trim surround. The door is single-leaf, wood frame with recessed glass panes in a rectangular shaped, two by five vertical glazing pattern.

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[26]Darrel Palmer, Edgar Frease, and Barry Staymates, Taped Interview with Gerald Elfendahl, August 29, 1995, Bainbridge Island Historical Society. Hereafter cited as Palmer et al. Interview.

[27]Grant B. Shipley. "Trend of the Wood Preserving Industry in the United States." A Presentation Given at the American Wood Preservers' Association, Louisville, Kentucky, January 22, 1929, p.6; EPA, *RI-FS Work Plan for the Wyckoff/Eagle Harbor Superfund Site, Bainbridge Island*, Washington, January 7, 1994, p. 2-2.

The west facade has the appearance of a two-story building. The lower story is vertical board siding that extends up to the actual single floor of the building. The lower level has a plain, flush door left of centerline in the facade. The upper portion of the facade has one window left and right of centerline. The two windows are identical to those in the north facade. Exposed rafter ends form a shallow eaves. The eaves line at the right upper corner of the facade slopes downward as part of a shed-roofed extension to the hip roof.

The south facade is at ground level. The facade has a recessed entry way at centerline and two small windows, one left and one right of center, and positioned in the upper half of the exterior wall. The windows has flat openings, square shape, plain trim surrounds, slipsills, and two over two glazing in a fixed sash. The entry way door is left of centerline and set back in a recess formed by exterior walls and the shed-roofed extension. The door opening is flat with plain trim. The door is wood with four rectangular, horizontal recessed panels. Exposed rafter ends form a shallow eaves.

The east facade is identical to the west facade.

Residence No. 2

This house is a single-story, square plan, frame building with a medium-hipped roof. A square, red-brick chimney penetrates the roof surface at the peak. The below-floor configuration is the same as that for Residence No. 1. The roof is sheathed in composition shingle. The exterior walls are shiplap board siding.

The north facade contains a veranda-style, frame porch extending across the entire front of the building; the roof of the porch is a shed-roofed extension from the hip roof. Exposed rafter ends form a moderate eaves. Centered on the porch is a set of plain board steps. Centerline in the facade is one entry way; four windows are evenly distributed left and right of the door. The windows have flat openings, rectangular shape, plain trim surrounds, slipsills, double-hung sashes, and two-pane, side by side glazing in each sash. The entry way is flat with a plain trim surround. The door is single-leaf, wood frame with recessed glass panes in a rectangular shaped, two by five vertical glazing pattern.

The east facade has the appearance of a two-story building. The lower story is surfaced with vertical board siding that extends upward to the actual single floor of the house. The lower level has an entry way that is flat, with plain trim surround. A wood door with four recessed panels is located right of centerline in the facade. A flat window opening with plain trim surround, three over three glazing in a fixed sash, appears at the extreme right corner of the lower level. This residence serves as an example of the changes made to workers' housing to meet individual family needs. The lower portion appears to have been modified to create an extra room with its own entry way.

The upper level of the east facade has two square windows left and one large picture window right of centerline. The remains of a red-brick chimney are centerline in the facade. The chimney is demolished above the eaves. The picture window is rectangular, single-glazed, and has a plain trim surround. This window occupies one-third of the exterior wall surface of the facade, and extends from slightly above the wall-floor junction to the roof-wall junction. Immediately left of the chimney is a window opening that is square, flat, and plain trimmed with a lug sill. The window sash is fixed and glazed with three horizontal, rectangular panes. The left-most window opening is small, square, and plain trimmed with a lug sill. The double-hung window is single-glazed. Exposed rafter ends form a moderate eaves. The eaves line at the upper left corner of the facade slopes downward as part of a shed-roofed extension to the hip roof.

The south facade is the same as that of Residence No. 1.

The west facade has three window openings, two rectangular and one square. The large rectangular windows are left and right of centerline and the small square window is centerline in the facade. All three window openings are flat with plain trim surrounds and lugsills. The rectangular windows are double-hung and glazed with two-panes, side by side in each sash. The square window is glazed two over two in a fixed sash. Exposed rafter ends form a moderate eaves. The eaves line at the right upper corner of the facade slopes downward as part of a shed-roofed extension to the hip roof.

Residence No. 3

This house is a one and one-half story, square plan, frame building with gables on the east and west facades. The exterior walls are shiplap board siding. The moderately sloped roof was sheathed in composition shingles. The roof is penetrated by two square, red-brick chimneys, one on the west facade at the peak of the gable and one on the east facade through the eaves. The below-ground configuration is the same as that for Residence No. 1.

The east facade has four window openings: three on the main floor and one in the half story, centered in the facade. The openings are flat with plain trim surrounds and slipsills. The lower portion of the facade that covers the foundation framing is vertical board. On main floor level, the window on the left is rectangular, with a long horizontal axis, and glazed three over three in a fixed sash. The center window is square, single glazed in a fixed sash. The window on the right is rectangular and has single glazed, sliding sashes. The window in the half story is rectangular with a single glazed, double-hung sash. Right of centerline is a red-brick chimney the extends from ground level through the eaves to approximately five feet above the roof surface. Moderate eaves are formed by a narrow fascia board covering purlin ends.

The north facade has a veranda-style, frame porch that extends across the entire front of the house. A set of plain board steps affords access to the porch. The left one-third of the porch has been modified by addition of framing and screen wire to make a separate screened enclosure. The lower portion of this addition is covered by shiplap board siding. The remaining two-thirds of the

porch is open with a plain wood balustrade. The balustrade is constructed from dimension lumber with an X-shaped design between the upper and lower railings. The roof of the porch serves as an extension of the main roof, but with a lesser degree of slope.

History

These three residences are all that remain of a row of 17 company-owned houses rented to creosote plant workers at the site. Historical records indicate that the houses date from circa 1910. In the earliest photographs, the houses were located near the waterline of the bay. In historical photographs taken after the mid-1920s, they appear halfway up the ridge overlooking the bay. Interviews with local residents revealed that sometime in the mid-1920s, a major change in the physical layout of the site occurred; part of that change involved the relocation of the workers' houses upslope to create more space in the storage yard.[28]

Many of the workers' houses appear to have been altered or renovated according to the needs of individual occupants. Some of the original small stoops were modified into sleeping porches or into extra rooms as the families grew. The houses had electricity, supplied by the plant, well before the rest of Bainbridge Island residents. A local resident who grew up in the one of these houses lauded "the radiators that were slow to get going, but kept the house warm all the same." Water was supplied in the houses from company wells.[29] The company began to sell the workers' houses in the early 1950s. The new owner was responsible for moving the house off the property. One former employee bought two of the houses and joined them together, and currently lives in that residence.[30]

Summary

Together, these buildings represent what remains of the industrial and administrative functions of the Pacific Creosoting Plant. The log peeling operation prepared the wood for treatment, which took place in the retorts that had once been connected to the engine room building. The boiler room provided power and steam for the treatment process, and workers repaired equipment in the machine shop. The office and boom lunch room comprise the administrative branch of the facility. The operations at the plant, including the creosoting process, are described below.

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[28] H. C. Henry. Photograph Albums, Accession No. 1420. Special Collections, Suzzallo Library, University of Washington, Seattle; Palmer et al. Interview; D. Palmer Interview: Video Presentation by Gerald Elfendahl, January 31, 1996, Bainbridge Island Historical Society. Hereafter cited as Video Presentation.

[29] Jeannie Bell, Taped Interview with Gerald Elfendahl, August 31, 1995, Bainbridge Island Historical Society. Hereafter cited as J. Bell Interview.

[30] Chips Christopherson, Taped Interview with Gerald Elfendahl, August 25, 1995, Bainbridge Island Historical Society. Hereafter cited as C. Christopherson Interview.

III. HISTORICAL CONTEXT

The Early Development of Eagle Harbor

From the outset of Euroamerican settlement, lumbering proved to be a central industry in Eagle Harbor's development. The harbor, which extends about a mile along the eastern side of Bainbridge Island, increased the area's accessibility, making it an attractive location for lumbering operations.

Euroamerican settlement at Bainbridge Island dates back to 1854, when G.A. Meigs established a saw mill at Port Madison in the northern section of the island. During the next decade, William Renton constructed the world's largest saw mill at Port Blakely in the southern section of Bainbridge Island. By the 1860s, Kitsap County had become one of the most populous in Washington Territory, owing to the success of its lumber mills.[31]

In 1875, Mike Taylor became one of the first settlers to stake a homestead claim on Eagle Harbor. He operated a logging camp at this location, selling timber to the Port Blakely mill. The growing lumber industry encouraged the development of several communities in the Eagle Harbor area during the late nineteenth and early twentieth centuries. Located on the north side of the harbor, Winslow -- which was originally called "Madrone" -- became a focal point for the area's commerce. The Hall Brothers moved their shipyard to this location in 1903, and some residents on the south side of Eagle Harbor began rowing across the bay to work there.[32]

Communities on the south side of Eagle Harbor included Eagledale and Creosote. Originally called "South Side," Eagledale received its current name around 1920, when residents held a contest to find a "more exciting" title. During the late nineteenth century a settler called "Old Gus" planted potatoes around Bill Point on the south side. By 1881, Captain Silvanus N. Saddler, an ox-yoke maker, had purchased this land. Six years later, he established a brick yard at this site, attracting additional settlers. Saddler operated this facility for around five years. At the turn of the century, the Pontiac Brick and Tile Company operated the yard, utilizing sand from the property.[33] An historical map indicates that the brick kilns remained on the property as of 1904.[34]

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[31]Fredi Perry, editor, *Kitsap County: A Centennial History* (Bremerton, 1989), p. 1; Katy Warner, *A History of Bainbridge Island* (Bainbridge Island Public Schools, 1968), pp. 15-16; Iva Luella Buchanan, "An Economic History of Kitsap County, Washington, to 1889," Ph.D. Dissertation, University of Washington Seattle, 1930, p. 86.

[32]Katy Warner, A History of Bainbridge Island, pp. 49-50; Elise Frankland Marriott, *Bainbridge Through Bifocals* (Seattle: Gateway Printing Company, 1941), p. 83; Kitsap County Historical Society, *Kitsap County History: A Story of Kitsap County and its Pioneers*, 1977, p. 69.

[33]Allen W. Beach, *Bainbridge Landings* (Driftwood Press, 1960), n.p.; Elise Franklin Marriott, *Bainbridge Through Bifocals*, pp. 83-84.

[34]Harbor Line Chart of Washington, 1904, Bainbridge Island Historical Society.

The Early Creosote Industry at Eagle Harbor

Wood preserving plants developed slowly in the United States, for many nineteenth-century industrialists believed the nation's timber supply to be inexhaustible. The railroad industry -- a massive consumer of wood for crossties and bridge timbers -- had found it more economical to replace rotting wood periodically than to treat it with preservatives. By the early twentieth century, however, wood preserving plants had appeared with increasing frequency throughout the West, due to rising wood prices and growing public concern about the nation's depleting forests. The State of Washington had eight wood preserving plants in 1920. Creosote became widely used in preventing the decay of wood, particularly since this substance discouraged marine boring animals from attacking pilings in saltwater harbors.[35]

The creosote industry in Eagle Harbor reflected this development. In 1905, the Perfection Pile Preserving Company, which had operated a wood treatment plant at Port Madison, moved its facility to Bill Point, east of the brick plant. The community then became known as "Creosote," after the wood preserving industry that flourished there. Initially, workers preserved poles and logs by wrapping them in burlap and asphalt. Later, large tankers arrived in Eagle Harbor carrying creosote oil, which was unloaded at the site. Steamships then carried the processed piles, ties, and lumber to markets around the world.[36]

The Development of the Creosote Plant at Eagle Harbor

In July 1906, the Pacific Creosoting Company acquired the Perfection Pile Preserving Company. When H.R. Rood, the organizer and manager of the company, lost his life on the *Titanic*, Horace C. Henry became the manager of the plant.[37] Early improvements included a new steel tank, company store, post office, and dock extension. Initially, the office was located on the second floor of the company store. After 1929, a separate office building was constructed near the water to serve the administrative needs of the plant.[38]

According to one historian, the "outstanding feature" of this facility was the narrow railroad track running up the dock, which included a small cart that brought supplies to the store and plant. "Every young boy was envious of the one who got to push the cart along the track," he noted, and

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[35]Sherry H. Olson, *The Depletion Myth: A History of Railroad Use of Timber* (Cambridge: Harvard University Press, 1971), pp. 57-69; American Wood Preservers Association. *Proceedings* (Chicago, Ill.: Hammond Press, W.B. Conkey Company, 1920), p. 330.

[36]Katy Warner, *A History of Bainbridge Island*, p. 51; Elise Franklin Marriott, *Bainbridge Through Bifocals*, p. 85.

[37]Elise Frankland Marriott, *Bainbridge Through Bifocals*, p. 85; Personal Communication, Paul Townley and John Warner, February 8, 1996.

[38]McDonald Interview.

"the girls liked to ride."[39] Other sources also indicated that this rail line and cart were important components of the distribution system of the plant. By 1939, the number of railroad tracks about the site had given it the appearance of a mainline switching yard (see Photograph WA-131-11).[40]

During the early twentieth century, as many as 100 men were employed at the plant, and most of them lived at the facility. The work force sometimes reflected seasonal and economic conditions. During the periods of international conflict such as World War I and World War II, the demand for treated wood products rose to meet the needs of the military and the numbers of workers rose accordingly. However, the number of full-time workers at the plant remained fairly stable throughout the first 50 years of its existence From the late 1950s until the year the plant closed, the work force numbered around 60 to 70, with seasonal increases as college men earned money during the summers working at the peeler or out on the boom.[41]

The Pacific Creosoting Company produced a number of treated wood products. A 1919 advertisement in a wood preservation industry document characterizes the company as "the Largest Creosoting Plant in the West," and announces "Piling, Mine Timbers, Cross-arms, Bridge Timbers, Paving Blocks, Railroad Ties, Conduit, and Stave Pipe" among the wood items treated at the plant.[42] Treated Douglas fir blocks, used for street paving and for the floors of some industrial machine shops, were manufactured in the paving block saw mill on the north side of the West Dock. Although the demand for wood paving blocks diminished with the advent of asphalt and concrete paving technologies, the saw mill remained in its original location until it was torn down in the mid-1970s.[43]

Before the proliferation of private automobiles and an adequate road system for their use, Creosote was isolated from the rest of the Bainbridge Island community. Much of the island remained inaccessible to employees until the 1940s. Single men working at the plant slept in bunkhouses, where they also took their meals, and those with families resided "in neat rows of company cottages."[44] A variety of historical maps dating from 1910-1929 show that the plant included approximately 17-19 houses, along with bunkhouses and a boarding house (see Figures 8 and 9). Historical photographs indicate that most of the houses were small, uniform bungalows with pyramidal roofs. They sat on a hill overlooking the water and the plant (see Photographs WA-131-6 through 8). One historian noted that local residents referred to these homes as "the row."

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[39]Allen W. Beach, *Bainbridge Landings*, n.p.

[40]Katy Warner, *A History of Bainbridge Island*, p. 51.

[41]Palmer et al. Interview; D.Palmer Interview.

[42]American Wood Preservers Association. *Proceedings* no publisher, 1919, p. ix.

[43]D. Palmer Interview.

[44]Elise Franklin Marriott, *Bainbridge Through Bifocals*, p. 85.

Employees walked to work at the plant, she explained, and their children walked to the nearby McDonald school.[45]

A resident of one of the company houses recalled that they were "very comfortable." Rent was "reasonable," she remembered, and "you could have all the wood that you wanted." Unlike much of Bainbridge Island during the early twentieth century, these homes had electricity, and many of them included water heaters.[46] Other former residents remembered that the houses, which had foundations of creosoted timber, rented for around $10 per month.[47] Initially, they featured approximately four rooms, and many occupants eventually added sleeping porches.[48]

Residents purchased supplies and obtained meals at the company store, and these were deducted from their paychecks. A barber visited the plant every few weeks. Located west of the plant site on the other side of a large ravine was a public dance hall, frequented by married couples and single men. A bridge across the ravine provided access to the dance hall, which served the Creosote community as a roller rink until sometime in the early 1950s. Company facilities included a recreation room, where the men played cards.[49]

In 1930, the West Coast Wood Preserving Company was incorporated for the purpose of operating two separate creosoting plants: the Pacific Creosoting Company in Eagle Harbor and the Coleman Creosoting Works in West Seattle. The J.H. Coleman Company had been in operation on Harbor Island since 1884.[50] The two plants, under single management, became known to employees as the "P" plant and the "C" plant. Through a process of evolution, the "P" plant later became primarily involved with treating poles and piling, while the "C" plant focused it efforts on crossties, crossarms, and structural framing members that required a great deal of milling before being treated.[51]

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[45]Katy Warner, *A History of Bainbridge Island*, p. 51.

[46]Jeannie Bell, Telephone Interview with Lisa Mighetto, Bainbridge Island and Seattle, April 12, 1995. Hereafter cited as Bell Interview.

[47]Edgar Frease, *Notes on Creosote History*, p. 2; Don Christopherson, Telephone Interview with John Warner, Bainbridge Island and Seattle, August 14, 1995. Hereafter cited as Don Christopherson Interview.

[48]Larry Christopherson, Telephone Interview with John Warner, Bainbridge Island and Seattle, August 11, 1995. Hereafter cited as Larry Christopherson Interview.

[49]Bell Interview; Chips Christopherson, Telephone Interview with John Warner, Bainbridge Island and Seattle, August 11, 1995. Hereafter cited as Chips Christopherson Interview; D. Palmer Interview.

[50]Personal Communication - Paul Townley, CH2M HILL, and John Warner, HRA, Inc., February 8, 1996, p. 11; American Wood Preservers Association. *Proceedings* (Baltimore, Md.: Peters Publishing Co., 1912), p. 284.

[51]Walker Interview; Palmer et al. Interview; D. Palmer Interview.

Former employees recalled the West Coast Wood Preserving Company with fondness, remembering it as "community-oriented." Larry Christopherson, who worked as an assistant superintendent, reported that the company donated light poles for the local high school's football field, and presented hams and turkeys to employees during the holiday season.[52] Delbert McDonald, another former employee, recalled that the plant had a baseball team, and that workers enjoyed a camaraderie.[53]

The work, however, remained difficult and dangerous. McDonald, who was employed as a bark peeler, recalled his tasks as being "dirty and smelly." Although hearing-impaired since birth, he was bothered by the loud noise of the peeling machinery. McDonald was also injured when a log fell on his leg. Because the plant did not include an infirmary, he was taken to a doctor in Winslow.[54] Representatives of the United Brotherhood of Carpenters and Joiners of America, who unionized the plant in 1937, ensured that workers followed safety procedures at the plant, and the company distributed flyers encouraging employees to exercise caution around equipment (see Figures 10 and 11).[55]

Throughout the early twentieth century, the creosote plant remained a focal point for the residents of Bainbridge Island, many of whom were employed there. During this period, it was essential to the local economy as well as to that of the region, becoming one of the largest wood preserving facilities in the world. The market for its creosoted products was extensive, including San Francisco, Alaska, and Saudi Arabia. They were used in construction of the Panama Canal as well as water supply lines in Seattle and in telephone lines along the Los Angeles aqueduct.[56] Creosoted wood from Eagle Harbor was also used in military projects during World War II. One former employee reported seeing treated pilings from the plant in Camh Ranh Bay, Vietnam, in 1969-70. So important was the plant to the national defense effort that some employees were exempted from the draft.[57]

In 1959, the Baxter-Wyckoff Company acquired the property. By the mid-twentieth century, the general store, bunkhouse, and houses had been removed.[58] Even so, much of the infrastructure of the plant remained largely intact through the 1980s, when the EPA listed the area as part of a

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[52]Larry Christopherson Interview.

[53]McDonald Interview, p. 6.

[54]McDonald Interview.

[55]Larry Christopherson Interview; Palmer et al. Interview.

[56]West Coast Wood Preserving Company, *West Coast Wood Preserving Company -- Two Treating Plants*, Bainbridge Island Historical Society, n.d.; Video Presentation.

[57]Larry Christopherson Interview.

[58]McDonald Interview, p. 4.

Superfund site. Owing to the presence of pentachlorophenol and other chemicals that had been used in the wood treatment process, this agency began remediation efforts that resulted in the removal of much of the plant's infrastructure.[59]

The Creosoting Process at Eagle Harbor

Wood preserving was an exacting, specialized process. Its purpose was to impregnate timber with chemicals that were toxic to destructive organisms, such as termites and marine borers. Wood preservatives not only had to be toxic to wood-destroying insects and fungi; they also had to penetrate to an adequate depth.[60]

The Pacific Creosoting plant used coal-tar creosote, a distillate of coal-tar produced by high temperature carbonization of bituminous coal. Creosote, a by-product of the steel making process, is manufactured in countries producing large amounts of steel. The Pacific Creosoting plant received its creosote from countries such as Germany, Belgium, Great Britain, and Japan.[61] When the cost of creosote-only wood preserving became too high, creosote-petroleum mixes (usually in equal proportions) were used. In the early 1950s, a chemical compound called pentachlorophenol (PCP), which was dissolved in aromatic oil, began to be used at the facility.[62] Every two to eight months, barges and tankers delivered creosote to the site. From the late 1920s to the early 1980s, workers off-loaded preservative materials into a system of pipes that carried it from the fuel dock to Tank 6C, which had a storage capacity of 1.37 million gallons.[63]

Wood treated in the creosote plant was often green (containing a large percentage of free moisture), and required seasoning; the company employed the Boulton method for seasoning green wood before treatment. This process, devised by S.B. Boulton and patented in England in 1879, is a method of conditioning green wood for treatment by boiling it in a coal-tar solution under vacuum. The Boulton method is a widely accepted means of preserving Douglas fir. These timbers from the Pacific Northwest accounted for 90 percent of the trees treated in the plant. Depending on the eventual use of the treated wood products, treatment was accomplished using the full-cell or empty-cell impregnation process. Full-cell impregnation is used primarily for marine applications;

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[59]Bell Interview.

[60]West Coast Wood Preserving Company, *Manual for the Preservative Treatment of Douglas Fir Timber*, Bainbridge Island Historical Society, circa 1940s, p. 1.

[61]Palmer, et al. Interview.

[62]Mark Walker, Taped Interview with Gerald Elfendahl, September 6, 1995, Bainbridge Island Historical Society. Hereafter cited as Walker Interview.

[63]Environmental Protection Agency, *RI-FS Work Plan for the Wyckoff/Eagle Harbor Superfund Site Plan, Bainbridge Island*, Washington, January, 1994, pp. 2-2, 2-7, and 2-9; Walker Interview.

the empty-cell process is for inland applications such as crossties, telephone poles, power poles, or fence posts.[64] Differences between the processes will be explained later in this section.

Before preservation, timber has to be prepared for treatment by peeling the bark. The log peeling operation, located west of the main plant area, began by withdrawing the timbers from the water up the skid ramp. Workers debarked, trimmed, sized, and classified the green timbers according to various job specifications, and moved them to a storage yard to air dry. If green timbers were needed immediately to fulfill a contract, they were moved to the framing area south of the retort building. During the preparation phase, pole timbers were incised for uniform penetration of the wood preservative (see Photograph WA-131-A-10).[65]

Boring, adzing and pre-fitting of structural components was completed prior to placing any timbers in the retorts. Exposed wood surfaces had to be treated fully or the product would fail before its expected lifetime. Early electrical power poles, for example, required a series of bored holes and flat surfaces (dado cuts) to mount crossarms. In the 1950s, the framing operation at the Wyckoff Facility could bore up to sixteen holes in one pass on a single pole. An adzing machine made the dado cuts for the flat surfaces.[66]

Finished timbers used for bridges, railroad trestles, and other structural purposes were cut and pre-fitted before treatment in the retorts. These were usually acquired from mills in the region, and were either brought in by barge (prior to the 1940s) or by truck, after roads to the site were finished. The structural timbers were bored, trimmed, and pre-fitted in a manner similar to the power poles. After the framing process was complete, the structure being framed was disassembled and sent to the transfer pit. Railroad crossties, brought in via the Milwaukee dock by the carload, received their necessary boring and milling operations in the framing area. Crossties arriving for treatment were usually green, and sometimes required minimum milling to square them, and adzing to create a flat surface for the rail mounting plate.[67]

The transfer pit, consisting of a recess, fronts the entire west side of the retort building. At the transfer pit, charges were placed on trams or in the case of poles and pilings onto bolster trucks. These are bundles of finished wood items (pilings, bridge timbers, or cross ties) bound together for ease of handling and requiring the same specified preservation treatment. The trams or bolster trucks, with their charges, were loaded into enormous cylindrical tanks, called retorts.[68]

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[64]George M. Hunt and George A. Garratt. *Wood Preservation* (New York: McGraw-Hill Book Company, Inc., 1953), p. 200.

[65]D. Palmer Interview.

[66]Palmer, et al. Interview; D. Palmer Interview.

[67]Palmer et al. Interview; D. Palmer Interview; H.C. Henry Collection.

[68]Chips Christopherson Interview.

These structures are especially noteworthy. According to one source "the retorts at the Wyckoff Facility were the largest in the world."[69] Initially, the plant featured eight retorts, each approximately 125-132 feet in length (see Photographs WA-131-A-4 and A-5). These were connected to the engine room house. Between 1917 and 1929, the engine room was reconstructed, and five retorts were removed and six new ones were installed, leaving a total of nine (see Figures 8 and 9). As noted, one of the smaller retorts served as an air reservoir for pneumatic tools in the framing area.[70]

Once in the retorts and depending on the method chosen for the treatment cycle, the wood was subjected to either a vacuum or placed under pressure. If the wood was green, it was first seasoned using the Boulton process, immersed in creosote oil, and heated in a vacuum to remove water, wood sugars, and natural oils. "Seasoning and treatment of 'dead green' wood (wood that had received no air-drying time) in the retorts," noted a former employee, "could take up to fifty or sixty hours."[71]

After seasoning the wood in the retort, the full-cell impregnation method called for additional preservative to be introduced. The vacuum was released, and pressure was reapplied once the retort was full. Treatment times could vary from twenty-four to thirty hours for seasoned wood or much longer as already noted. Temperatures, recorded by thermometers, ranged between 160 to 200 degrees F (see Photograph WA-131-A-6). Temperature of the treatment solution was maintained with steam-heated coils that run the full interior length of each retort. After pressure was released and preservative withdrawn from the retort, a slight vacuum was reintroduced to aid in drying the treated product.[72]

If the empty-cell method was employed, the wood in the retort was first placed under pressure to inject air into the wood. This air-injection step enhanced the extraction of excessive preservative during the final vacuum step in the empty-cell method. While pressure was maintained, preservative was introduced into the retort. The pressure in the retort was increased to 150 pounds per square inch (psi) for sustained penetration. Temperatures of the preservative for this method were the same as those for the full-cell method. After the required treatment time had elapsed pressure was released, and the preservative was withdrawn from the retort. A high vacuum was then created in the retort to extract excess preservative from the treated product.[73]

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[69]Video Presentation.

[70]Paul Townley, Telephone Interview with John Warner, Seattle, August 18, 1995. Hereafter cited as Townley Interview.

[71]D. Palmer Interview; Hunt, *Wood Preservation*, p. 200.

[72]Hunt, *Wood Preservation*, pp. 200-201.

[73]Hunt, *Wood Preservation*, pp. 206-208.

After the wood had cooled, workers checked the depth and character of penetration by boring one or more auger holes. The plugs were inspected visually and assayed in the laboratory. If the wood passed inspection, it was ready for shipment; if it did not pass inspection, the entire charge was retreated. Certificates of guarantee accompanied each completed treatment contract.[74]

The creosoting process greatly enhanced the longevity of buildings and structures throughout the world. Marine pilings in Seattle, for example, remained in place for more than 50 years with no major maintenance or replacement.[75] Due to the toxicity of creosote, however, plants such as the Wyckoff Facility became the subject of environmental investigations during the last three decades. The creosote plant was closed because of environmental concerns. Even so, a world-wide demand remains for creosote-treated wood products to this day. According to two retired employees "that market exists today and will continue to exist in the future."[76]

By 1994, the large retorts, central to the wood treatment process, had been removed, and the transfer pit was excavated, owing to the need to remediate the soil. Removal of these structures resulted in the dismantling of the northwest side of the engine room building. Tank 6C was removed, and three additional tanks were cut down, to allow for remediation inside. The distribution system was also dismantled. The concrete pilings that once supported the rail car are no longer in the transfer pit, and the rail line to the main dock was also removed.

Many of the remaining buildings and structures of the Wyckoff Facility will be completely demolished, probably in 1996. Future use or uses of the site and final remediation plans have not been determined. Final plans will be as outlined in a forthcoming EPA Record of Decision for the site.

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[74]George E. Rex, Horace C. Henry, Photograph Album No. 3, Accession No. 1420, Special Collections Division, University of Washington, 1911, n.p.; D. Palmer Interview.

[75]"Wyckoff Company," Bainbridge Island Historical Society, n.d, n.p.

[76]Palmer et al. Interview; D.Palmer Interview.

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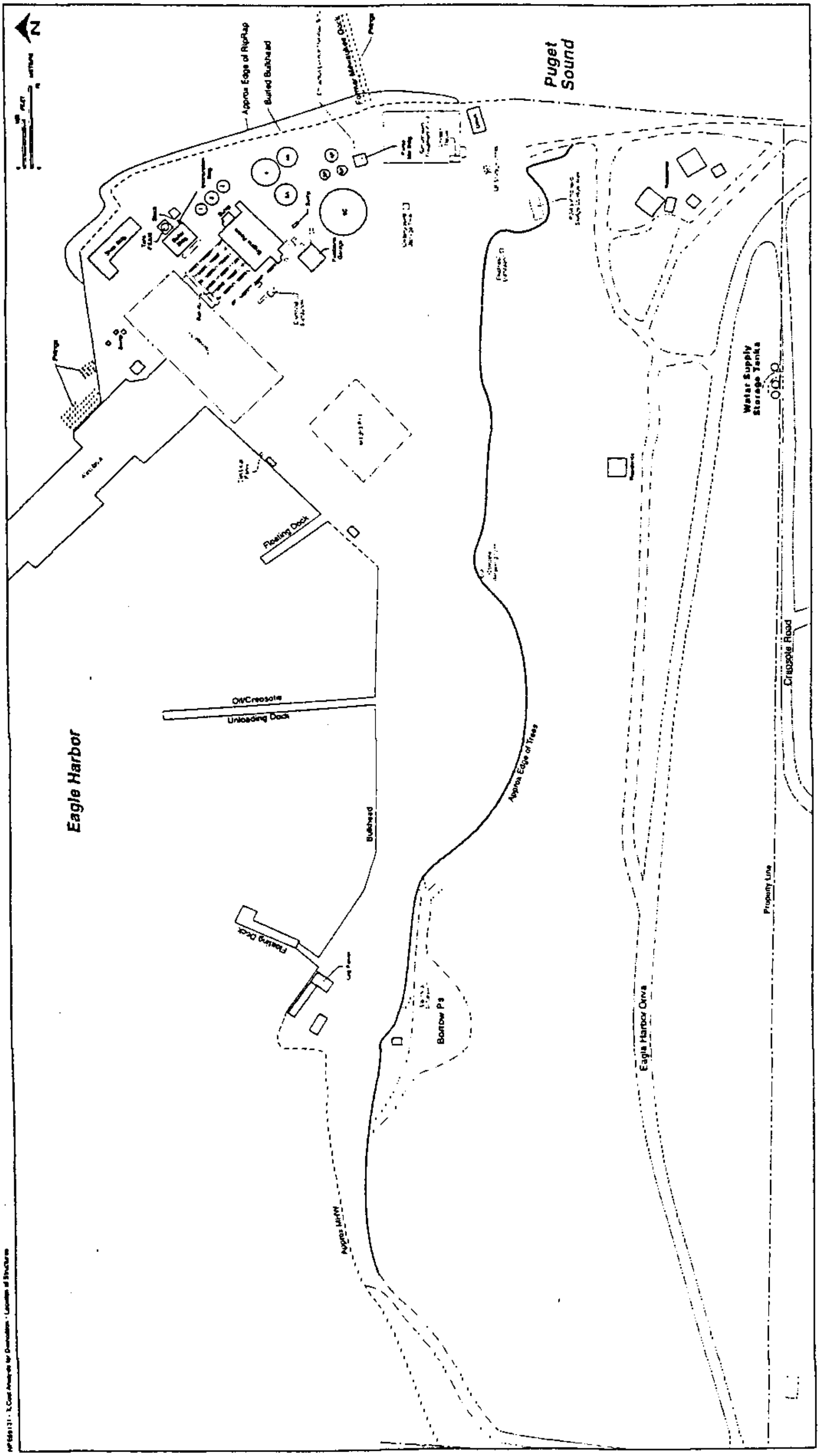
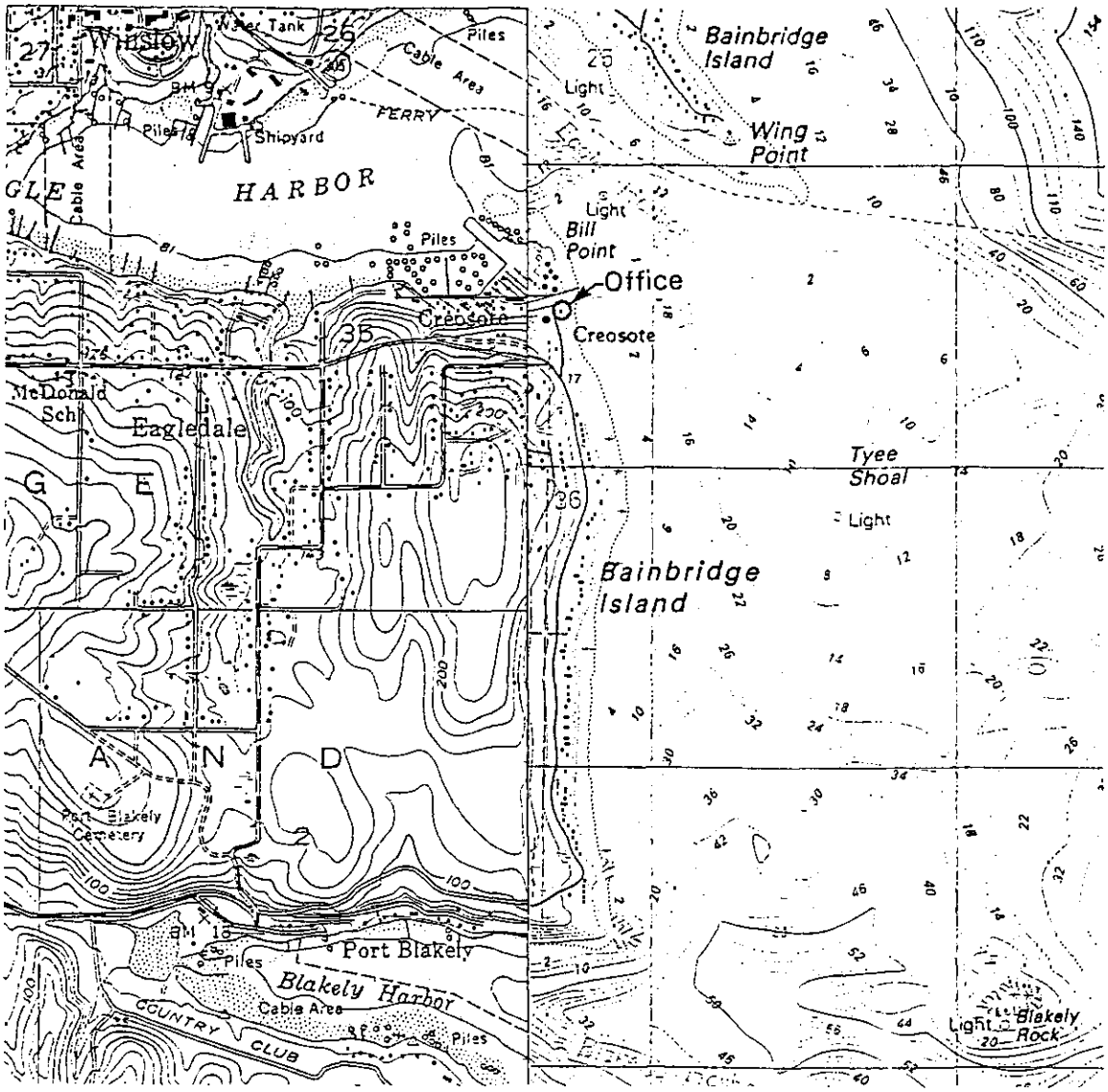


LOCATIONS OF EXISTING SITE STRUCTURES

NOTES:
1. Monitoring and groundwater extraction well locations and selected structures based on land survey conducted by CH2M HILL March 1992, property line and horizontal control monuments based on Faranhold and Assoc. map (no date), and selected structures and roads based on EPA 6-10-63 and 7-30-92 aerial photographs.
2. Water supply well designations per U.S. Naval Radio Station Map, 1943.

FIGURE 1



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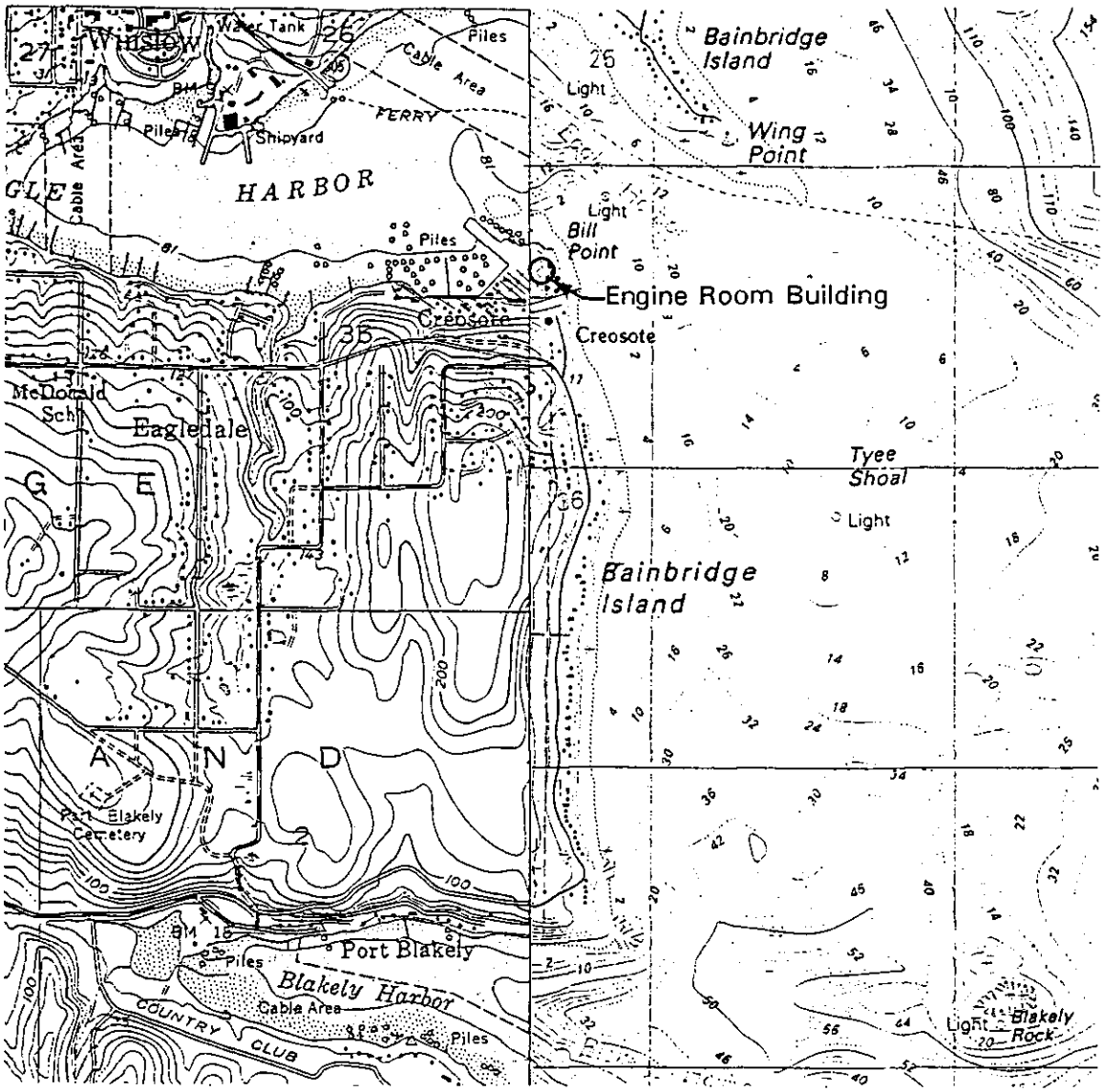
Section 35 Township 25 North Range 2 East
County Kitsap

FIGURE 2



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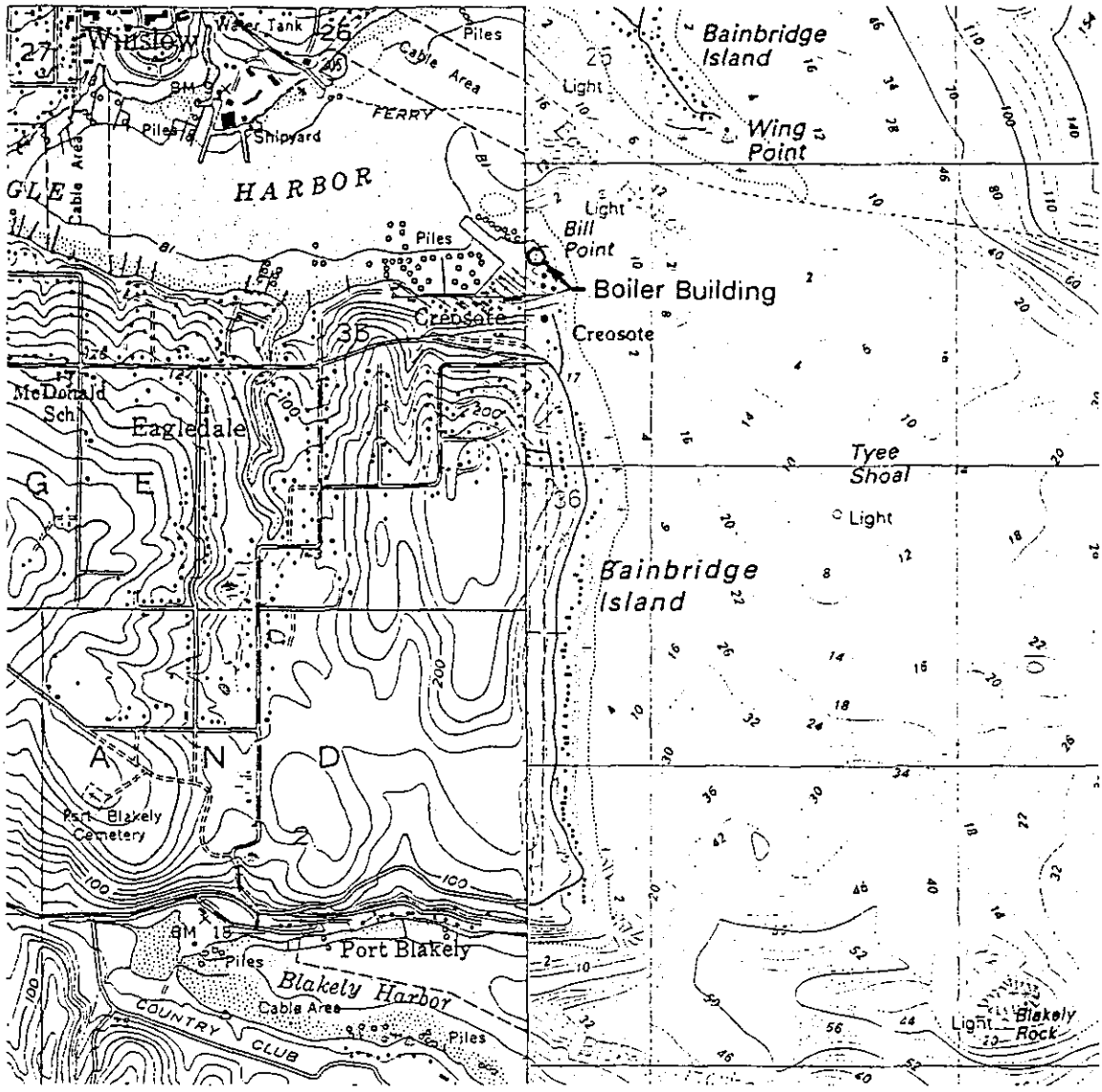
U.S.G.S. 7½' Topo Quads Bremerton East and Seattle South, Washington
Section 35 Township 25 North Range 2 East
County Kitsap

FIGURE 3



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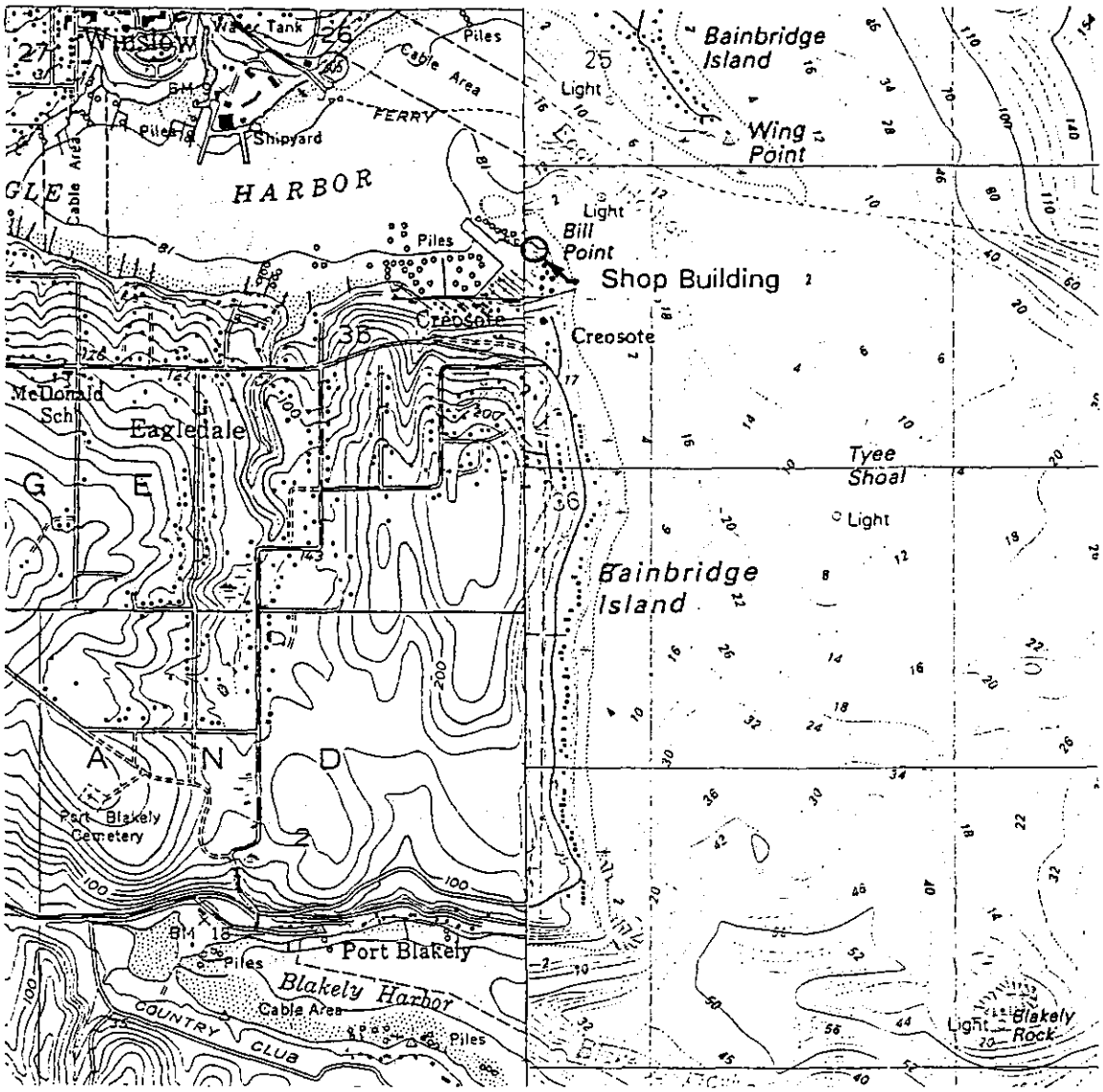
Section 35 Township 25 North Range 2 East
County Kitsap

FIGURE 4



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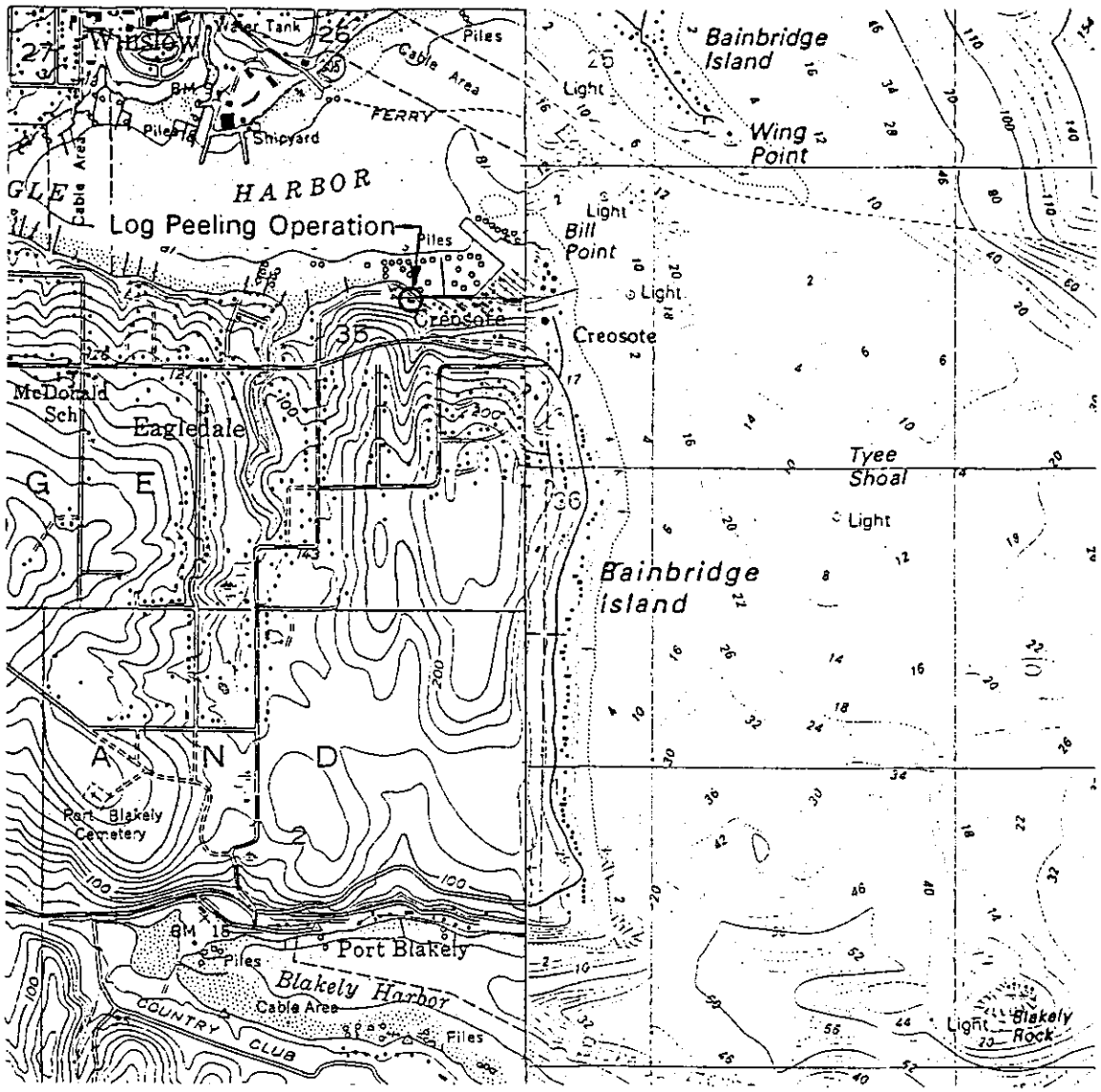
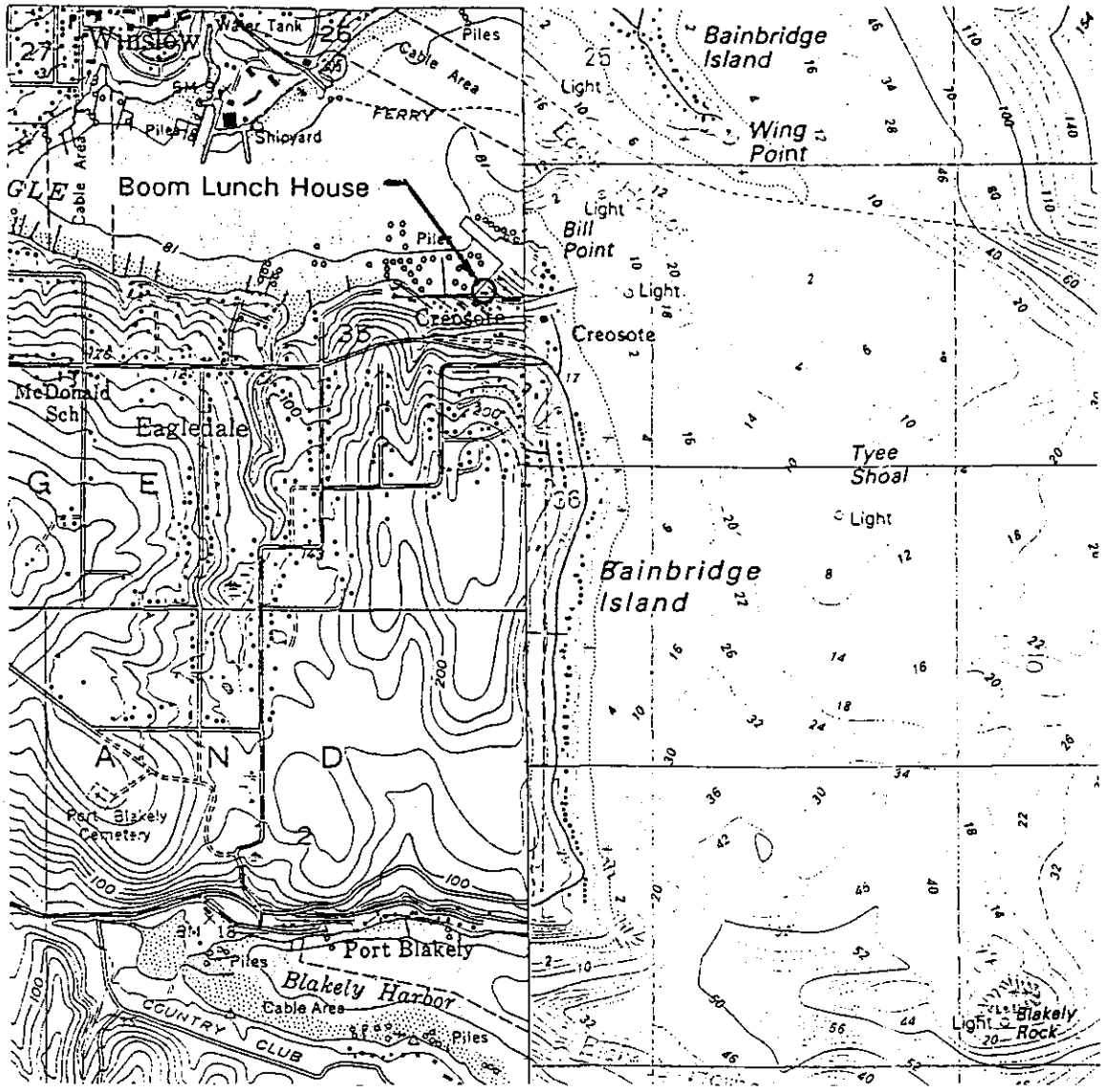
Section 35 Township 25 North Range 2 East
County Kitsap

FIGURE 5



U.S.G.S. 7½' Topo Quads Bremerton East and Seattle South, Washington
Section 35 Township 25 North Range 2 East
County Kitsap

FIGURE 6



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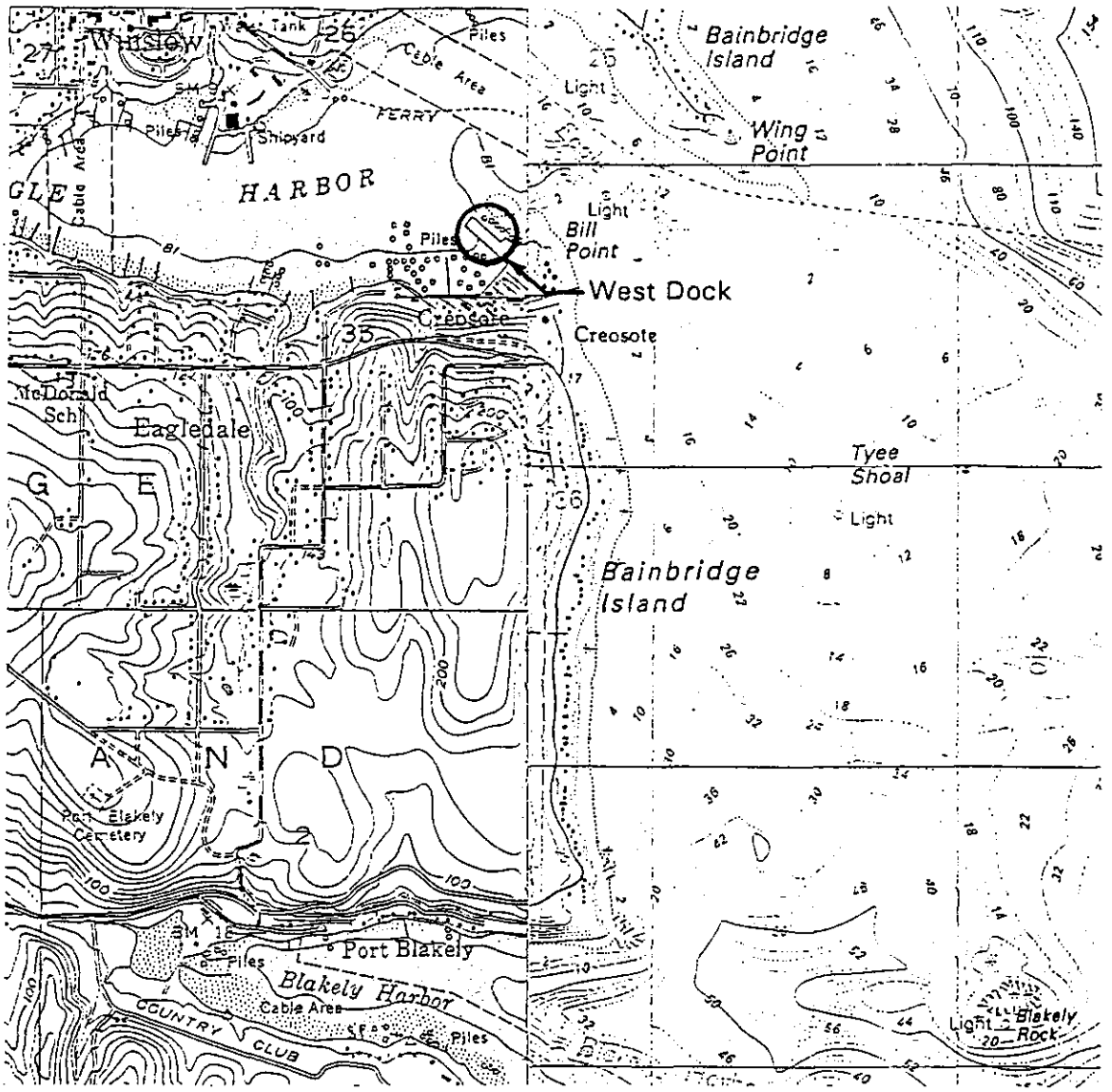
Section 35 Township 25 North Range 2 East
County Kitsap

FIGURE 7



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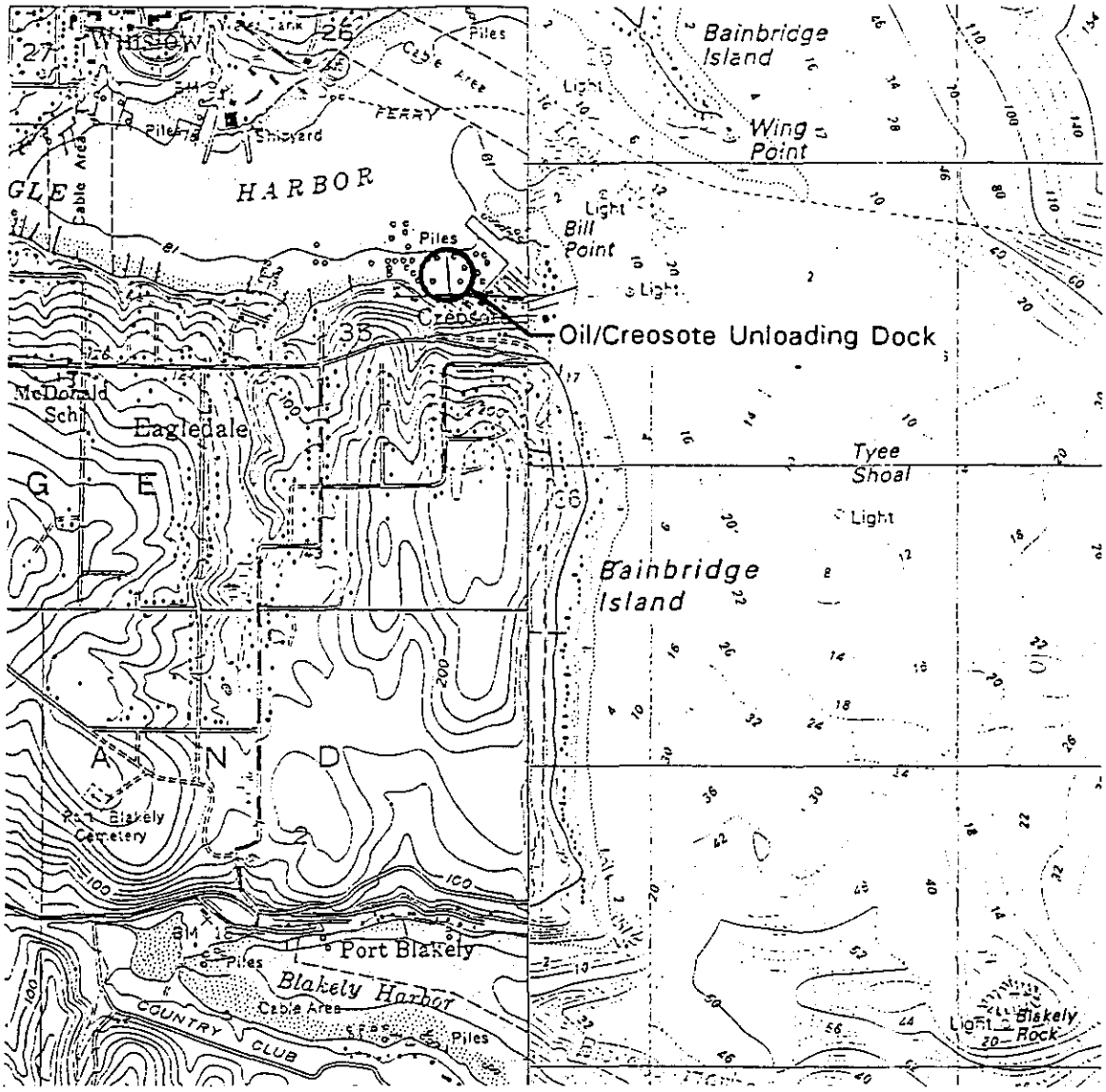
Section 35 Township 25 North Range 2 East
County Kitsap

FIGURE 8



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U.S.G.S. 7½' Topo Quads Bremerton East and Seattle South, Washington
Section 35 Township 25 North Range 2 East
County Kitsap

FIGURE 9

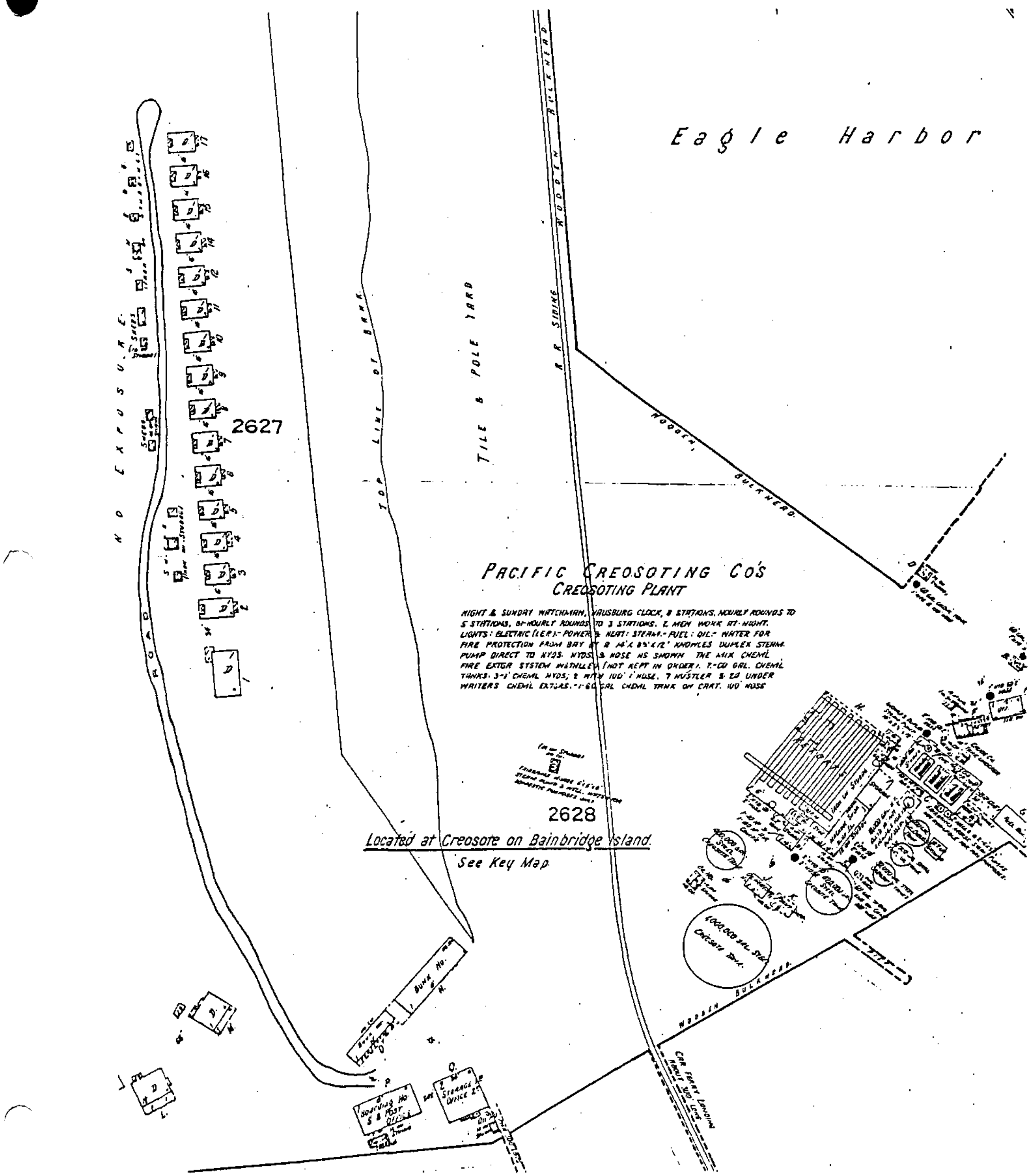
Eagle Harbor
PACIFIC CREOSOTING CO'S
CREOSOTING PLANT
2627
2628
Located at Creosote on Bainbridge Island.
See Key Map.
NO EXPOSURE
ROAD
TOP LINE OF BANK
TILE & POLE YARD
R.R. SIDING
WOODEN BULKHEAD
WOODEN BULKHEAD
4,000,000 GAL. STEEL CREOSOTE TANK
Bunk Ho.
Boarding Ho. & Post Office
Storage Office

FIGURE 10